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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,094	03/19/2002	Barry Lee-Mean Yang	RD-27190-2	8181

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EXAMINER
MEEKS, TIMOTHY HOWARD

ART UNIT	PAPER NUMBER
1762	4

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/063,094	Applicant(s) YANG ET AL.	
	Examiner Timothy H. Meeks	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-36* is/are pending in the application.

4a) Of the above claim(s) *36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *24-36* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 24-35, drawn to a method, classified in class 427, subclass 579.

II. Claim 36, drawn to an article, classified in class 428, subclass 411.1+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the coated article could be made by a different coating process such as sputtering.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Robert Santandrea on 23 June 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 24-35. Affirmation of this election must be made by applicant in replying to this Office action. Claim 36 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Interpretation

The phrase "expanding thermal plasma" is interpreted as follows:

Applicants' specification does not not provide a clear definition of the metes and bounds of an "expanding thermal plasma" but refers to USP 6,110,544 in paragraph 0002 as an example of an expanded thermal plasma. That patent describes an "expanded thermal plasma" formed by injecting argon into a DC arc plasma generator, generating plasma therefrom, and expanding the plasma through a diverging or bell-shaped nozzle-injector into a deposition chamber (6,110,544 at col. 2, lines 36-65). Therefore, the examiner has interpreted the term "expanding thermal plasma" to be a plasma generated by passing argon or argon-oxygen mixture through a DC arc plasma generator and then expanding the plasma through a diverging or bell-shaped nozzle-injector.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 24-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 887110 in view of Chan et al. (5,441,624).

The following limitations of claims 24 and 35 are disclosed in EP 887110:

- "coating a polycarbonate substrate" (page 2, lines 45-46);
- "generating".....a thermal plasma plume to produce a coating on the substrate (page 2, lines 33-55); and
- "said coatings being silica-based" and forming argon or argon-oxygen plasma (Table 1).

EP 887110 fails to explicitly disclose that multiple expanding thermal plasma plumes are generated with their central axes being parallel or being codirectionally oriented or moving the substrates past the plumes to deposit successive coatings but does disclose desirability to coat large area substrates and increase deposition rate (page 3, lines 1-5).

Chan et al. disclose that providing a plurality of coaxial arc sources allows for coating "a large area and/or to sequentially deposit a series of layers each of a different material". (col. 2, lines 40-45, figures 7 and 8, col. 7, lines 38-68). Given the disclosure of EP 887110 of the desirability to coat a large area and the disclosure of Chan et al. that providing plural coaxial arc sources affords the capability to coat large areas, it would have been obvious to opne of

ordinary skill in the art to have provided plural expanded thermal plasma plumes in a coaxial arrangement so as to provide the ability to coat a larger area of the substrate which would have the inherent advantage of increasing process throughput for coating substrates larger than that covered by a single expanding thermal plasma plume.

The dependent claims are disclosed or suggested as follows:

- Claims 25-28 (page 1, lines 45-46 and Table 1 of EP 887110);
- Claims 29-33 (figure 8 and col. 7, lines 38-68 of Chan et al., the substrates will inherently be heated by the thermal plasma during coating); and
- Claim 34 (page 2, lines 15-20 disclosing use of the polycarbonate substrates in glazing and optical applications which typically require curved substrates).

Claims 24-30 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 887110 in view of Ackermann et al. (5,062,508).

The following limitations of claims 24 and 35 are disclosed in EP 887110:

- "coating a polycarbonate substrate" (page 2, lines 45-46);
- "generating".....a thermal plasma plume to produce a coating on the substrate (page 2, lines 33-55); and
- "said coatings being silica-based" and forming argon or argon-oxygen plasma (Table 1).

EP 887110 fails to explicitly disclose that multiple expanding thermal plasma plumes are generated with their central axes being parallel or being codirectionally oriented or moving

the substrates past the plumes to deposit successive coatings but does disclose desirability to coat large area substrates and increase deposition rate (page 3, lines 1-5).

Ackermann et al. disclose that providing a plurality of plasma sources in parallel over a moving substrate is effective "to increase the deposition rate". (col. 8, lines 5-20 and Figure 3). Given the disclosure of EP 887110 of te desirability to increase deposition rate and the disclosure of Ackermann et al. that providing plural plasma sources in parallel affords the capability to increase the deposition rate, it would have been obvious to one of ordinary skill in the art to have provided plural expanded thermal plasma plumes in a parallel, coaxial arrangement so as to provide the ability to increase the deposition rate which would have the inherent advantage of increasing process throughput for coating substrates larger than that covered by a single expanding thermal plasma plume.

The dependent claims are disclosed or suggested as follows:

- Claims 25-28 (page 1, lines 45-46 and Table 1 of EP 887110);
- Claims 29-30 and 32-33 (col. 8, lines 5-20 and fig. 3 of Ackermann, the substrates will inherently be heated by the thermal plasma during coating); and
- Claim 34 (page 2, lines 15-20 disclosing use of the polycarbonate substrates in glazing and optical applications which typically require curved substrates).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 24-35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-43 of copending Application No. 09/683,149. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the instant claims are included in those of the '149 application, the "parallel" limitation of the instant claims being inherent given the claimed features of a planar substrate and an array of plasma sources in the '149 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 24-35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 35-48 of copending Application No. 09/683,148. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the instant claims are included in those of the '148 application, the "parallel" limitation of the instant claims being inherent given the claimed features of a planar substrate and an array of plasma sources in the '148 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy H. Meeks whose telephone number is (703) 308-3816. The examiner can normally be reached on Mon., Tues., Thurs.(6-6:30), Fri.(6:30-10:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Timothy H. Meeks
Primary Examiner
Art Unit 1762

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June 26, 2003